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Some new American species of *Dryopteris*

CARL CHRISTENSEN

Since the publication of the first part of my monograph of the genus *Dryopteris* just a year ago I have examined a number of specimens collected recently in tropical America, some of which are found to belong to species hitherto undescribed. The present article contains descriptions of these and is thus a first year's supplement to the first part of the monograph. There is included also mention of two older species with which I was unacquainted before.

***Dryopteris* (*Lastrea*) *Shaferi* Maxon & C. Chr., sp. nov.**

Rhizome erect, 2–3 cm. high, 1 cm. thick, with many branched roots, furnished at the top with few brown, rather rigid, small (2–4 mm. long) scales, these ciliate by short, subulate, simple hairs. Stipites fasciculate, many together, rather strong and rigid, 4–6 cm. long, sulcate and very shortly pubescent above, rounded and nearly glabrous beneath, without scales. Lamina linear-lanceolate, 20–30 cm. long, 4–6 cm. broad at the middle, coriaceous, grayish green, short-acuminate, gradually tapering downward through 4–6 pairs of very reduced, auriculiform pinnae, pinnate-subbipinnatifid. Rachis very shortly pubescent by simple, spreading, acute hairs. Pinnae numerous (in larger fronds 30–40-jugate), sessile, alternate or subopposite, spreading, linear, generally more or less falcate, about 4 cm. long, 3–4

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mm. broad, acute or short-acuminate, glabrous, the costa beneath excepted, this very minutely hairy; base of pinnae with a rounded or subacute auricle on each side (basal segments); margins of pinnae crenate or more or less pinnatifidly incised, most deeply so at the middle and on the lower side, the latter usually more deeply lobed than the upper, still scarcely halfway to the costa; outer third of the pinnae often quite entire, like several of the lower and shorter pinnae. Lobes rounded, oblique. Veins raised above, furcate or simple in the entire part of the pinnae, pinnately branched in the lobes with 4 or 5 branches (tertiary veins), the two basal ones reaching the margin above the sinus between the lobes. Sori near the margin, this sometimes revolute and covering the sori. Indusium large, brown, reniform, hispid (especially on the edges) by simple setae. Sporangia glabrous.

CUBA: Vicinity of Camp San Benito, Oriente, altitude 900 meters, on the ground, February 24, 1910, *J. A. Shafer* 4037 (U. S. Nat. Herb. no. 657791, type). Quite the same plant also from Camp La Gloria, south of Sierra Moa, Oriente, Cuba, *J. A. Shafer* 8094, 8215 (U. S. Nat. Herb.).

Dryopteris Shaferi is closely related to *D. scalpturoides* (Fée) C. Chr., agreeing with it in most essential characters, differing from it mainly in its very narrow pinnae, which are less incised and glabrous above. In general habit our new species recalls *D. sagittata* (Sw.) C. Chr., especially its variety *tenebrica* (Jenm.) C. Chr.; but that species, belonging to the subgenus *Goniopteris*, is in all important characters widely different. The resemblance between the two is due to the narrow, hastate or sagittate pinnae. *Dryopteris Shaferi* is remarkable, among the species of the section *Lastrea*, in having its pinnae crenate, or barely pinnatifid, in which character it agrees only with the otherwise very different *D. brachypoda* (Bak.) C. Chr.

Dryopteris (*Lastrea*) **Jimenezii** Maxon & C. Chr., sp. nov.

Rhizome obliquely erect, scaly at the top. Stipites fasciculate, 3 or 4 together, 5–10 cm. long, rigid, channelled, without hairs, but in the lower part densely chaffy by castaneous, glossy, entire, ovate-acuminate scales, these up to 1 cm. long and easily deciduous. Lamina lanceolate, 30–50 cm. long, 10–15 cm. broad near the middle, upward gradually tapering into the pinnatifid apex, downward rather suddenly narrowed with 4 or 5 pairs of auriculiform pinnae, dark green, thinly membranous or firmly herbaceous, bipinnatifid. Rachis slender, slightly pubescent, especially above, by short, unicellular, appressed hairs. Pinnae alternate or subopposite at distances of 2–3 cm., sessile, acuminate, the middle ones 7–8 cm. long, 1.5–1.8 cm. broad, their midrib on both sides slightly hairy like the rachis, the surfaces with some few very inconspicuous appressed hairs (especially on the veins), pinnately incised to a narrow (1 mm.) costal wing. Segments about 1 cm. long, 2–3 mm. broad, obtuse or subacute, patent or a little oblique, considerably widened at the base and separated by broad but acute sinuses, their margins regularly and obtusely toothed or crenate; basal segments equal to the others or a little shorter. Veins simple, remarkably distant and distinct, about 6 to each side, nearly at right angles to the costula, running into the teeth. Sori small, supramedial, exindusiate. Sporangia few, early deciduous, glabrous.

COSTA RICA: San Jerónimo, altitude 1500 meters, collected by C. Wercklé, in April, 1910; Herb. Otón Jiménez no. 567 (U. S. Nat. Herb. no. 861635, type).

This new species is certainly a close ally of *D. supranitens* Christ and *D. tablaizensis* Christ, both from Costa Rica, resembling them in the presence of numerous scales on the stipes below, a character rather rare within

the subgenus *Lastrea*. From the former it differs in its non-glossy upper surface and in its patent and toothed segments; from the latter in its shorter pinnae, nearly glabrous rachis, and toothed segments. A pronounced character is found in the broad bases of the segments.

Dryopteris (*Lastrea*) **ptarmiciformis** C. Chr. & Ros. Repert. Sp. Nov. Fedde **12**: 472. 1913.

BOLIVIA: *Buchtien* 3545. Near *D. oligocarpa*, the segments very oblique; indusium distinct. Its systematic position will be between *D. oligocarpa* and *D. pilosula*.

Dryopteris (*Lastrea*) **subandina** C. Chr. & Ros.; Repert. Sp. Nov. Fedde **12**: 472. 1913.

BOLIVIA: *Buchtien* 3120. In habit not unlike *D. pachyrachis*, but having the sporangia setose as in *D. concinna*. This species should be inserted between *D. concinna* and *D. rufa* in the key.

Dryopteris (*Lastrea*) **arborea** Brause, nom. nov

Dryopteris roraimensis Brause, Notizblatt d. Kgl. Bot. Gart. Mus. Berlin. **6** (no. 54): 109. 1914 (non C. Chr. Ind. 289. 1905).

BRITISH GUIANA: Mt. Roraima, *Ule* 8526.

A very interesting novelty with a caudex 1 to 2 meters high and leaves nearly 1.5 meters long, bipinnatifid. In technical characters it is closely related to *D. Glaziovii*, from Brazil, and *D. euchlora*, from Ecuador, and its var. *inaequans* C. Chr., from Central America, from which it differs by several characters; for example, in its castaneous, glossy rachis.

Dryopteris (*Goniopteris*) **nephrodioides** (Kl.) Hieron. var. **glandulosa** C. Chr. & Ros. Repert. Sp. Nov. Fedde **12**: 473. 1913.

BOLIVIA: *Buchtien* 3410. A form with yellow glands on the under surface, a character hitherto not observed in the subgenus *Goniopteris*.

The following two species were not dealt with in the first part of my monograph. An examination of authentic specimens of both shows that they ought to have been included in the groups of species there treated.

Dryopteris (*Goniopteris*) **trinidadensis** (Jenm.) C.
Chr. Ind. 298. 1905.

Polypodium trinidadense Jenm. Gard. Chron. III.
18: 235. 1895.

TRINIDAD: Maiacas Falls, *J. H. Hart*, Bot. Gard.
Herb. Trinidad no. 5886 (Kew!).

The single sheet in the Kew Herbarium, consisting of one leaf without rhizome, named by Jenman, shows a plant that in habit resembles *Stigmatopteris Carrii* and allied species very much, but is in reality a *Goniopteris* of the section *Eugoniopteris*. It agrees in nearly all characters with *D. straminea* (Bak.) C. Chr. and may be a form of that species. It differs from it in its acute or even submucronulate teeth, the serrated acuminate apex of the pinnae (which are about 1.5 cm. broad), the non-gemmiferous rachis (an accidental character), and by having only 2 or 3 tertiary veins on each side of the secondary vein, the two basal ones terminating in the leaf-tissue and free, the upper ones running out to the thickened margin. In size, color, perfectly glabrous frond, stramineous costae, shape of pinnae, sori, and kind of venation, the two forms wholly agree. Having seen only the rather fragmentary authentic specimens of both, it is not possible to decide now whether *D. trinidadensis* is a form of *D. straminea*; but I am much inclined to so regard it. *Dryopteris straminea* was described from a single leaf collected by Fendler (no. 474), in Tovar, Venezuela, a locality very rich in ferns, many of which are found also in Trinidad.

Dryopteris (*Stigmatopteris*) **cyclocolpa** (Christ) C.
Chr. Ind. 260. 1905.

Polypodium cyclocolpon Christ, Bull. Herb. Boiss.
4: 659. 1896; Bull. Soc. Bot. Belg. 35: 216. 1896.

COSTA RICA: Forêts de Tsâki, Talamanca, *Tonduz*
9480.

A fragment, consisting of a pair of pinnae of the type-collection, in the U. S. National Herbarium (no. 832908), shows that this species is a genuine *Stigmatopteris*. Regarding *Stigmatopteris* as a valid genus, which it certainly is, the species must be called ***Stigmatopteris cyclocolpa*** (Christ) C. Chr., comb. nov. It is very different from the other Central American species of *Stigmatopteris*, but is closely related to *S. prasina* (Bak.) C. Chr., from Peru. The lamina is bipinnate-tripinnatifid; pinnae lanceolate, 25–30 cm. long 8–10 cm. broad, fully pinnate in the lower two-thirds. Pinnulae 4–5 cm. long, 10–12 mm. broad at the base, sessile, the upper broadly adnate and decurrent, acuminate, with a serrate apex, lobed $\frac{2}{3}$ – $\frac{3}{4}$ of the way to the midrib. Lobes rectangular, 2–4 mm. broad, serrate, especially at the obtuse or truncate apex. Veins mostly 4-jugate in the lobes, simple. Sori supramedial. Leaf grass-green, firmly herbaceous or membranous, distinctly pellucido-punctate, without hairs, but with some red-brown narrow scales on the lower part of the midrib of the pinnae beneath.

Stigmatopteris cyclocolpa differs from *S. prasina* in its much larger pinnae, these with many free pinnules which are more deeply incised, with serrated lobes.

In my monograph (page 79) I have mentioned under *S. prasina* a plant from Ecuador collected by Sodiro. This is very closely related to *S. cyclocolpa* and may be a form of the same species. It differs in its furcate veins, its more deeply, but not so sharply serrated lobes, and its larger pinnules.

Christ¹ has mentioned *Polypodium prasinum* Bak. as

¹ Bull. Soc. Bot. Belg. 35: 217. 1896.

occurring in Costa Rica (*Pittier* 7504). For the present I cannot say what species he has so determined; it is scarcely a *Stigmatopteris*.

Up to the present time *S. cyclocolpa* and *S. prasina* are the only species of the genus known which are fully bipinnate with pinnatifid pinnulae. Even the very large *S. contracta* (Christ) C. Chr. is bipinnatifid only, with the large segments again deeply incised.

COPENHAGEN, May, 1914.

Preliminary list of the ferns of the coast region of South Carolina north of Charleston*

LAURA M. BRAGG

The present paper is based on records from the Charleston Museum's plant survey of South Carolina. This survey aims to record for each species in South Carolina, (1) all published references to occurrence within the state, (2) data relative to herbarium specimens collected within the state, and, (3) the distribution of species as indicated by collecting and ecological study in different sections of the state.

For this summary of the ferns of the coast region north of Charleston the published sources have been John Bachman's Catalogue of phaenogamous plants and ferns, native or naturalized, found growing in the vicinity of Charleston, South Carolina, 1834; Henry W. Ravenel's Catalogue of the natural orders of plants inhabiting the vicinity of the Santee Canal, S. C.;† Lewis R. Gibbes' Botany of Edings' Bay;‡ W. C. Coker's three

*Reprinted with the addition of several paragraphs, and some modifications of the synonymy from the Bulletin of the Charleston Museum 10: 17-22. Feb. 1914.

† *Proc. Amer. Assoc. Adv. Sci.*, 2-17. 1830,

‡ *Proc. Ell. Soc.*, I, Oct., 241-248. 1857,